



107070-120.ST25.txt
SEQUENCE LISTING

<110> Hildt, Eberhard
Hofschneider, Peter

<120> Particles for Gene Therapy

<130> 107070-120 (VOS-013)

<140> US 09/890,752
<141> 2001-08-03

<150> PCT/DE00/00363
<151> 2000-02-04

<150> DE 199 04 800.2
<151> 1999-02-05

<160> 21

<170> PatentIn version 3.1

<210> 1
<211> 347
<212> PRT
<213> Artificial Sequence

<220>
<223> Fusion protein comprising a LHBS and heterologous binding
site RGD

<400> 1

Met Gly Arg Gly Asp Gly Ala Gly Ala Phe Gly Leu Gly Phe Thr Pro
1 5 10 15

Pro His Gly Gly Leu Leu Gly Trp Ser Pro Gln Ala Gln Gly Ile Leu
20 25 30

Glu Thr Leu Pro Ala Asn Pro Pro Pro Ala Ser Thr Asn Arg Gln Ser
35 40 45

Gly Arg Gln Pro Thr Pro Leu Ser Pro Pro Leu Arg Asn Thr His Pro
50 55 60

Gln Ala Met Gln Trp Asn Ser Thr Thr Phe His Gln Thr Leu Gln Asp
65 70 75 80

Pro Arg Val Arg Gly Leu Tyr Phe Pro Ala Gly Gly Ser Ser Ser Gly
85 90 95

Thr Val Asn Pro Val Pro Thr Thr Val Ser Pro Ile Ser Ser Ile Phe
100 105 110

Ser Arg Ile Gly Asp Pro Ala Leu Asn Met Glu Asn Ile Thr Ser Gly
115 120 125

Phe Leu Gly Pro Leu Leu Val Leu Gln Ala Gly Phe Phe Leu Leu Thr
130 135 140

Arg Ile Leu Thr Ile Pro Gln Ser Leu Asp Ser Trp Trp Thr Ser Leu
145 150 155 160

107070-120.ST25.txt

Asn Phe Leu Gly Gly Thr Thr Val Cys Leu Gly Gln Asn Ser Gln Ser
165 170 175
Pro Thr Ser Asn His Ser Pro Thr Ser Cys Pro Pro Thr Cys Pro Gly
180 185 190
Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile Ile Phe Leu Phe Ile Leu
195 200 205
Leu Leu Cys Leu Ile Phe Leu Leu Val Leu Leu Asp Tyr Gln Gly Met
210 215 220
Leu Pro Val Cys Pro Leu Ile Pro Gly Ser Ser Thr Thr Ser Thr Gly
225 230 235 240
Pro Cys Arg Thr Cys Thr Thr Pro Ala Gln Gly Thr Ser Met Tyr Pro
245 250 255
Ser Cys Cys Cys Thr Lys Pro Ser Asp Gly Asn Cys Thr Cys Ile Pro
260 265 270
Ile Pro Ser Ser Trp Ala Phe Gly Lys Phe Leu Trp Glu Trp Ala Ser
275 280 285
Ala Arg Phe Ser Trp Leu Ser Leu Leu Val Pro Phe Val Gln Trp Phe
290 295 300
Val Gly Leu Ser Pro Thr Val Trp Leu Ser Val Ile Trp Met Met Trp
305 310 315 320
Tyr Trp Gly Pro Ser Leu Tyr Ser Ile Leu Ser Pro Phe Leu Pro Leu
325 330 335
Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile
340 345

<210> 2
<211> 215
<212> PRT
<213> Artificial sequence

<220>
<223> Fusion protein comprising a HBCAg, a cell-permeability-
mediating polypeptide and heterologous binding site RGD

<400> 2

Met Pro Leu Ser Ser Ile Phe Ser Arg Ile Gly Asp Pro Thr Val Gln
1 5 10 15
Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile Asp Pro
20 25 30
Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu Pro Ser
35 40 45
Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser Ala Leu
50 55 60

107070-120.ST25.txt

Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His His Thr
65 70 75 80
Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr Leu Ala
85 90 95
Thr Trp Val Gly Val Asn Leu Glu Asp Pro Glu Phe Arg Gly Asp Ala
100 105 110
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
115 120 125
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
130 135 140
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
145 150 155 160
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
165 170 175
Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
180 185 190
Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
195 200 205
Gln Ser Arg Glu Pro Gln Cys
210 215

<210> 3
<211> 663
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA coding for a fusion protein comprising a HBcAg, a
cell-permeability-mediating polypeptide and heterologous
binding site RGD

<400> 3
atgcccatat cgtcaatctt ctcgaggatt ggggaccctg gatccactac tgttcaagcc 60
tccaagctgt gccttggggtg gctttggggc atggacatcg acccttataa agaatttgga 120
gctactgtgg agttactctc gtttttgcct tctgacttct ttccttcagt acgagatctt 180
ctagataccg cctcagctct gtatcgggaa gccttagagt ctcctgagca ttgttcacct 240
caccatactg cactcaggca agcaattctt tgctgggggg aactaatgac tctagctacc 300
tggggtgggtg ttaatttgga agatccagaa ttccgaggcg acgcgtctag agacctagta 360
gtcagttatg tcaacactaa tatgggccta aagttcaggc aactcttggtg gtttcacatt 420
tcttgctca cttttggaag agaaaccgtt atagagtatt tgggtgtcttt cggagtgtgg 480
attcgactc ctccagctta tagaccacca aatgccccta tcctatcaac acttccggaa 540
actactgttg ttagacgacg aggaggtcc cctagaagaa gaactccctc gcctcgcaga 600

107070-120.ST25.txt

cgaaggctctc aatcgccgcg tcgcagaaga tctcaatctc gggaacctca atgttagtat 660
tcc 663

<210> 4
<211> 1047
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA coding for a fusion protein comprising a LHBS and
heterologous binding site RGD

<400> 4
atgggcccgtg gcgaaggagc tggagcattc gggctgggtt tcaccccacc gcacggaggc 60
cttttggggt ggagccctca ggctcagggc atactacaaa ctttgccagc aaatccgcct 120
cctgcctcca ccaatcgcca gacaggaagg cagcctaccc cgctgtctcc acctttgaga 180
aacactcatc ctcaggccat gcagtgaat tccacaacct ttcaccaaac tctgcaagat 240
cccagagtga gaggcctgta tttccctgct ggtggctcca gttcaggagc agtaaaccct 300
gttccgacta ctgcctctcc cttatcgta atcttctcga ggattgggga ccctgcgctg 360
aacatggaga acatcacatc aggattccta ggaccccttc tcgtgttaca ggcgggggtt 420
ttcttggtga caagaatcct cacaataccg cagagtctag actcgtggtg gacttctctc 480
aattttctag ggggaactac cgtgtgtctt ggccaaaatt cgcagtcccc aacctccaat 540
cactcaccaa cctcctgtcc tccaacttgt cctggttatc gctggatgtg tctgcggcgt 600
tttatcatct tcctcttcat cctgctgcta tgcctcatct tcttggtggt tcttctggac 660
tatcaaggta tggtgcccgt ttgtcctcta attccaggat cctcaaccac cagcacggga 720
ccatgccgaa cctgcatgac tactgtctaa ggaacctcta tgtatccctc ctggtgctgt 780
accaaaccct cggacggaaa ttgcacctgt attcccatcc catcatcctg ggctttcgga 840
aaattcctat gggagtgggc ctcagcccggt ttctcctggc tcagtttact agtgccattt 900
gttcagtgggt tcgtagggct ttccccact gtttggtttt cagttatatg gatgatgtgg 960
tattgggggc caagtctgta cagcatcttg agtccctttt taccgctggt accaattttc 1020
ttttgtcttt ggggtatacat ttaaacc 1047

<210> 5
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 5

107070-120.ST25.txt
ccatattctt gggaacaaga tatccagcac ggggc 35

<210> 6
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 6
ggattgctgg tggaagatat ctgccccgtg ctg 33

<210> 7
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 7
cagcacgggg cagatatctt ccaccagcaa tcc 33

<210> 8
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 8
gccccgtgct ggatatcatc ttgttcccaa gaatatgg 38

<210> 9
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 9
aaaagatctg gccgtggcga aggagctgga gcattc 36

<210> 10
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 10
aaaagatctg gtttaaagt atacccaaag 30

<210> 11
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 11
 cccgatatca tgtcatctct tgttcatgtc cta 33

<210> 12
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 12
 ggggatatcg gtcgatgtcc atgccccaaa 30

<210> 13
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 13
 gggggatccc gatgtacggg ccagatatat gcgttg 36

<210> 14
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 14
 gggggatccg cggccgcttt acttgta 27

<210> 15
 <211> 57
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA coding for a cell-permeability mediating peptide

<220>
 <221> misc_feature
 <222> (1)..(57)
 <223> Nucleotides 1-3 and 55-57 are "n" wherein "n" = any nucleotide.

<400> 15
nnnagatcta tgcccatatc gtcaatcttc tcgaggattg gggaccctgg atccnnn 57

<210> 16
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<220>
<221> misc_feature
<222> (1)..(3)
<223> Nucleotides 1-3 "n" wherein "n" = any nucleotide.

<400> 16
nnnggatcca ctgttcaagc ctccaagctg 30

<210> 17
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<220>
<221> misc_feature
<222> (1)..(3)
<223> Nucleotides 1-3 "n" wherein "n" = any nucleotide.

<400> 17
nnngaattct ggatcttcca aattaacacc caccca 36

<210> 18
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<220>
<221> misc_feature
<222> (1)..(3)
<223> Nucleotides 1-3 "n" wherein "n" = any nucleotide.

<400> 18
nnngaattcc gaggcgacgc gtctagagac ctagtagtc 39

<210> 19
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

107070-120.ST25.txt

<220>
 <221> misc_feature
 <222> (1)..(3)
 <223> Nucleotides 1-3 "n" wherein "n" = any nucleotide.

<400> 19
 nnnaagcttt ccccacctta tgagtccaag

30

<210> 20
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> cell permeability-mediating peptide

<400> 20

Pro Leu Ser Ser Ile Phe Ser Arg Ile Gly Asp Pro
 1 5 10

<210> 21
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA encoding cell permeability-mediating peptide

<400> 21
 cccatattcgt caatcttctc gaggattggg gaccct

36